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ABSTRACT

A study investigated the effectiveness of Emergent Reader Literacy Instruction (ERLI), an eclectic approach to teaching reading which incorporates phonics, basal texts, quality literature, and writing instruction through daily inclusion of guided reading, word wall/making words, self-directed reading, and writing. A preliminary investigation, carried out mid-year, compared 100 experimental subjects and 100 control subjects randomly selected from the first-grade roster of a Lexington, South Carolina school district. Subjects were administered two components of "The Basic Reading Inventory." Results indicated that the ERLI group performed significantly better than the control group at the independent level for comprehension and at the frustration level for vocabulary. Plans for a similar end-of-year analysis were revised because non-ERLI teachers adopted ERLI components in their own classrooms and contaminated potential control subjects. Instead, Cognitive Skills Assessment Battery (CSAB) scores were used to match 557 ERLI students form the 1995-96 first grade cohort with 557 control students from the 1994-95 first grade cohort. Results indicated that mean scores on the vocabulary, reading comprehension, total reading, and language subtests were significantly greater for ERLI students. Results also indicated that ERLI students scored 4 months higher than controls on each of the four measures. Findings provide strong evidence for the use of multiple traditional reading instruction methods but leaves unanswered many questions concerning possible synergistic effects and what possible proportional combinations may be most effective. (Contains 13 references, and 13 tables and 9 figures of data.) (Author/RS)

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ED 404 636

AN INVESTIGATION INTO THE EFFECTIVENESS OF THE EMERGENT READER LITERACY INSTRUCTION MODEL

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AN INVESTIGATION INTO THE EFFECTIVENESS OF THE EMERGENT READER LITERACY INSTRUCTION MODEL

(Abstract)

This study was done to investigate the effectiveness of a new model for the teaching of reading which was used with approximately 50% of the first graders in Lexington School District One during the 1995-96 school year. The model, Emergent Reader Literacy Instruction (ERLI), is based upon the work of Dr. Patricia Cunningham of Wake Forest University. ERLI is an eclectic approach to the teaching of reading which incorporates all four of the major historically recognized methods of reading instruction: (1) instruction in phonics; (2) instruction in basal texts; (3) immersion in quality literature; and (4) instruction in writing. This is accomplished through the daily inclusion of four instructional blocks: guided reading; word wall/making words; self-directed reading; and writing.

A preliminary investigation was carried out at mid-year. Following the Winter break, 100 experimental (ERLI) subjects and 100 control (traditional) subjects were randomly selected from the 1995-96 first grade roster for the district. All subjects were individually administered two components of *The Basic Reading Inventory, Sixth Edition* (1994) during the month of January: Word Recognition in Isolation (Vocabulary) and Word Recognition in Context (Comprehension). Independent, Instructional, and Frustration Reading Levels were obtained for each of the components along with Raw Scores. During the first week of the school year all subjects had been administered the *Cognitive Skills Assessment Battery* (CSAB), a state-normed first grade readiness test.

A Chi Square analysis was performed using Independent, Instructional, and Frustration Performance Level scores for Word Recognition in Isolation (Vocabulary) and Word Recognition in Context (Comprehension). Only two significant differences were found. The ERLI Group performed significantly better than the Control Group at the Independent Level for Comprehension and at the Frustration Level for Vocabulary.

Plans for a similar end-of-year analysis had to be revised because the popularity of ERLI with teachers resulted in substantial contamination of any potential controls as non-ERLI teachers adopted ERLI components in their own classrooms. The revised plan used CSAB scores to match 557 ERLI students from the 1995-96 first grade cohort with 557 control students from the 1994-95 first grade cohort since no ERLI instruction was provided during the 1994-95 school year. *The Metropolitan Achievement Test, Seventh Edition* was administered to both groups using the same testing window near the end of each group's first grade year as a part of district achievement testing. Mean CSAB scores were nearly identical (Control=95.85 and Experimental=95.81; r=.999). Although not planned, demographics for the two groups were highly similar in terms of gender, race, and socio-economic status.

Vocabulary, Reading Comprehension, Total Reading, and Language subtest means were compared for the two groups using dependent t-tests. Means were significantly greater for ERLI students on all measures (p=.0001). In terms of Grade Equivalent Scores, ERLI students scored four months higher than controls on each of the four measures.

This study provides strong evidence for the use of multiple traditional reading instruction methods as advocated by Dr. Cunningham. It leaves unanswered many questions concerning possible synergistic effects and what possible proportional combinations may be most effective. It does not provide a clear comparison to pure Whole Language instruction. It does, however, provide much insight and a sound model for determining the effectiveness of reading programs which do address these issues.

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Chapter 1

Introduction

As recently as thirty years ago, there were two clearly defined schools of thought concerning methods of teaching reading: the sight or whole word method and the phonics method. Both schools of thought claimed to have discovered "the" method for teaching reading. Fortunately for society, both were highly successful methodologies. In reality, while most primary teachers identified with one or the other of the methods, their instruction reflected a combination of the two. Research of the period indicates that it was this combination which was most effective (Bond & Dykstra, 1967).

Just over a decade ago, all of this changed as suddenly a literature-based program for the teaching of reading known as Whole Language made its appearance. Whole language defies any exact definition but has two prerequisite characteristics: (1) It is literature-based. (2) It avoids the segmentation of language into its component parts for specific skill instruction. It is neither systematic nor hierarchical. Legitimatized by its ties to theorists such as Len Vygotsky, Louise Rosenblatt, Kenneth Goodman and Frank Smith, Whole Language became firmly entrenched in many schools of education.

While Lexington School District One neither adopted, authorized, nor encouraged any Whole Language program, its

cadre of primary teachers became increasingly influenced by the movement since many young teachers were thoroughly indoctrinated as a part of their teacher preparation. This was accompanied by a marked decline in standardized reading scores in the primary grades at all ability levels.

Improving reading instruction at the primary level became a high priority. The Coordinator of Language Arts and the Coordinator of Academic Assistance Programs visited numerous reading programs throughout the Southeast in an effort to identify an effective model. Both became convinced that the reading model proposed by Dr. Patricia Cunningham of Wake Forest University held the greatest potential. This model is the antithesis of Whole Language. The model incorporates as separate entities all four of the major methods through which reading has been historically taught:

1. Instruction in Phonics
2. Instruction in Basal Textbooks
3. Immersion in Quality Literature
4. Instruction in Writing

The daily language arts block is divided into four distinct parts:

1. Guided Reading
2. Word Wall/Making Words
3. Self-Directed Reading
4. Writing

Teachers were trained and during the 1995-96 school year 626

of the district's 1,185 regular (non-Special Education) first grade students received a full implementation of the Cunningham Model which in Lexington School District One is referred to as the Emergent Reader Literacy Instruction (ERLI) Model (Cunningham, 1997).

The ERLI program has been a tremendous public relations success. It is praised by teachers, liked by students and strongly supported by parents. It is the purpose of this study to determine the degree to which ERLI is successful in increasing reading achievement.

Chapter 2

Review of Literature

During the 1970's almost all popular reading methodologies fell somewhere on a continuum from pure phonics to pure sight recognition of words. It was still possible at any point along this continuum to utilize a number of different approaches including at the extremes, the language experience approach and the basal reader approach. Group size could be varied from individual one-on-one to entire class instruction.

The various linguistic methods for teaching reading were also prominent during this period. Linguistics can be defined in a broad and over-generalized way as "the study of language." Two of the most prominent linguistic theorists were the late Leonard Bloomfield and the late Charles C. Fries. Fries offered a definition of linguistics that is at once broad and succinct:

> ...a body of knowledge and understanding concerning the nature and functioning of human language, achieved by the scientific study of the structure, the operation, and the history of a wide range of very diverse human languages (Fries, 1969).

Linguistics obviously proved compatible with either phonics or whole word reading instruction or a combination of the two.

It is most difficult to determine exactly when or where the Whole Language concept became a potent force in the

teaching of reading. Its effects were clearly felt by the mid-1980's, however. It is as difficult to define as it is to identify its inception date. Perhaps it is difficult to determine when it started precisely because no one seems to know exactly what it is. Both Kenneth and Yetta M. Goodman from the University of Arizona at Tuscon have written extensively in favor of Whole Language. How Children Construct Literacy: Piagetian Perspectives (1991) by Yetta Goodman is essentially a philosophical and theoretical defense of Whole Language. Kenneth Goodman took aim at Basal Reader programs in his book Report Card on Basal Readers (1988).

In most states Whole Language "trickled" into the schools--usually from university professors (the Goodman's are the ultimate example) to teachers. In California, however, it received an official mandate. In 1987 the California Department of Education incorporated Whole Language into its English-Language Arts Framework. The only K-8 textbook series approved by the state was Whole Language based (Diegmueller, 1996).

By the early 1990's public opinion started to turn against Whole Language. In 1994, the National Assessment of Educational Progress (NAEP) revealed that 59% of California's fourth graders--whose entire language arts instruction program had been Whole Language based since kindergarten--scored below basic level. California ranked 49th out of the 50 states with only Louisiana performing

more poorly. This resulted in intervention by the California Legislature which passed what has become known as the "ABC Law". It requires that state education officials give "adequate attention" to systematic explicit phonics and spelling when adopting educational materials. It also requires the rewriting of curriculum frameworks to include this same "adequate attention".

Whole Language supporters in academia quickly became defensive. Education Week (March 20, 1996) quoted Kenneth Goodman as saying, "The test scores--that is simply political fodder. I think what you have to look at is the political agenda." Jerome C. Harste, Professor of Language Education at Indiana University in Bloomington, was quoted in the same article as saying, "They're not scaring me back into direct teaching."

Other states which never went as far as California in supporting Whole Language are also taking steps to block its implementation. Nebraska's state school board has adopted a reading policy which requires a "balanced approach". In North Carolina, a "Phonics First" bill is being sponsored in the legislature which allows the use of non-Phonics approaches only after Phonics has failed to produce results. A similar law failed to be passed in Ohio.

Whole Language advocates claim that Whole Language and Phonics are totally compatible. The only requirement is that Phonics be taught in context. No part of Whole Language instruction is supposed to be compartmentalized

from any other. However, Whole Language is more of a philosophy than a methodology. It requires giving teachers control over what they teach and students great choice about what they learn. Strong Phonics supporters see Phonics instruction in terms of discrete and sequential skills and this is totally at odds with the Whole Language philosophy.

Several articles in the March 20, 1996 issue of Education Week point out that the real struggle now seems to be between Whole Language and Phonics. Basal Texts and Whole Word methodologies seem to have fallen by the wayside almost completely. It is summed up by Diegmueller's statement that "The political activity has been a bonanza to the back-to-basics industry and other phonics proponents."

Bill Honig was a superintendent of schools in California when the Whole Language approach was adopted. He is now a Professor of Education at San Francisco University and has written a book, Teaching Our Children to Read. He strongly supports a balanced approach but his favorable comments about Phonics instruction have endeared him to religious conservatives--especially in Texas where the language debate is heating up. It seems that while many who support a balanced approach oppose Whole Language, these are being overshadowed by the much more vocal religious conservatives who seem totally devoted to Phonics.

Patricia Cunningham of Wake Forest University has developed a balanced approach model for reading instruction which utilizes four major methods of reading instruction:

Instruction in Phonics, Instruction in Basal Textbooks, Immersion in Quality Literature, and Instruction in Writing. These are applied in four distinct time segments: Guided Reading, Word Wall/Making Words, Self-Directed Reading, and Writing. Her model is generic and is known variously as the Cunningham Model, the Four-Block Model, and the Emergent Reader Literacy Instruction Model among others (Cunningham, 1997).

The literature is rich in calls for balance in reading instruction. However, most of these calls for balance are not accompanied by a model designed to obtain the desired balance.

Chapter 3

The Effectiveness of the Emergent Reader Literacy Instruction Model

3.1 Research Questions

The primary purpose of this two-part study is to investigate the effectiveness of Emergent Reader Literacy Instruction (ERLI), a model for reading instruction based upon the work of Dr. Patricia Cunningham of Wake Forest University which was implemented during the 1995-96 school year with approximately fifty percent of the more than one thousand two hundred first graders in Lexington School District One. More specifically, Part One of this study addresses the research question: "Will a full implementation of the ERLI model result in increased independent, instructional, and frustration levels of functioning on the Word Recognition in Isolation (Vocabulary) and Word Recognition in Context (Comprehension) subtests of *The Basic Reading Inventory, Sixth Edition?*" Six Hypotheses must be considered to answer the research question for Part One:

Hypothesis 1:

There is a difference in Independent Level for Vocabulary as measured by *The Basic Reading Inventory, Sixth Edition* for ERLI and non-ERLI first grade students.

Hypothesis 2:

There is a difference in Instructional Level for Vocabulary as measured by *The Basic Reading Inventory, Sixth Edition* **for ERLI and non-ERLI first grade students.**

Hypothesis 3:

There is a difference in Frustration Level for Vocabulary as measured by *The Basic Reading Inventory, Sixth Edition* **for ERLI and non-ERLI first grade students.**

Hypothesis 4:

There is a difference in Independent Level for Comprehension as measured by *The Basic Reading Inventory, Sixth Edition* **for ERLI and non-ERLI first grade students.**

Hypothesis 5:

There is a difference in Instructional Level for Comprehension as measured by *The Basic Reading Inventory, Sixth Edition* **for ERLI and non-ERLI first grade students.**

Hypothesis 6:

There is a difference in Frustration Level for Comprehension as measured by *The Basic Reading Inventory, Sixth Edition* **for ERLI and non-ERLI first grade students.**

Part Two of the study addresses the research question: "Will a full implementation of the ERLI model result in increased scaled scores on the Reading and Language Arts Subtests of the *Metropolitan Achievement Test, Seventh Edition* for first grade students?" Four additional Hypotheses are examined to answer this research question:

Hypothesis 7:

ERLI students will have a different mean scaled score on the Total Reading Subtest of the MAT-7 from non-ERLI students.

Hypothesis 8:

ERLI students will have a different mean scaled score on the Reading Vocabulary Subtest of the MAT-7 from non-ERLI students.

Hypothesis 9:

ERLI students will have a different mean scaled score on the Reading Comprehension Subtest of the MAT-7 from non-ERLI students.

Hypothesis 10:

ERLI students will have a different mean scaled score on the Language Subtest of the MAT-7 from non-ERLI students.

3.2 Research Design and Subject Selection

Part One of this study was carried out at mid-year and used a Quasi-Randomized Design. Following the Winter Break, 100 Experimental (ERLI) subjects and 100 Control (Traditional) subjects were randomly selected from the 1995-96 first grade roster for the district with special education students removed. The resulting groups were similar in terms of both ability and demographics. Table 1 compares the groups based upon scores on the *Cognitive Skills Assessment Battery* (CSAB), a state-normed first grade readiness test. Figure 1 shows the cumulative

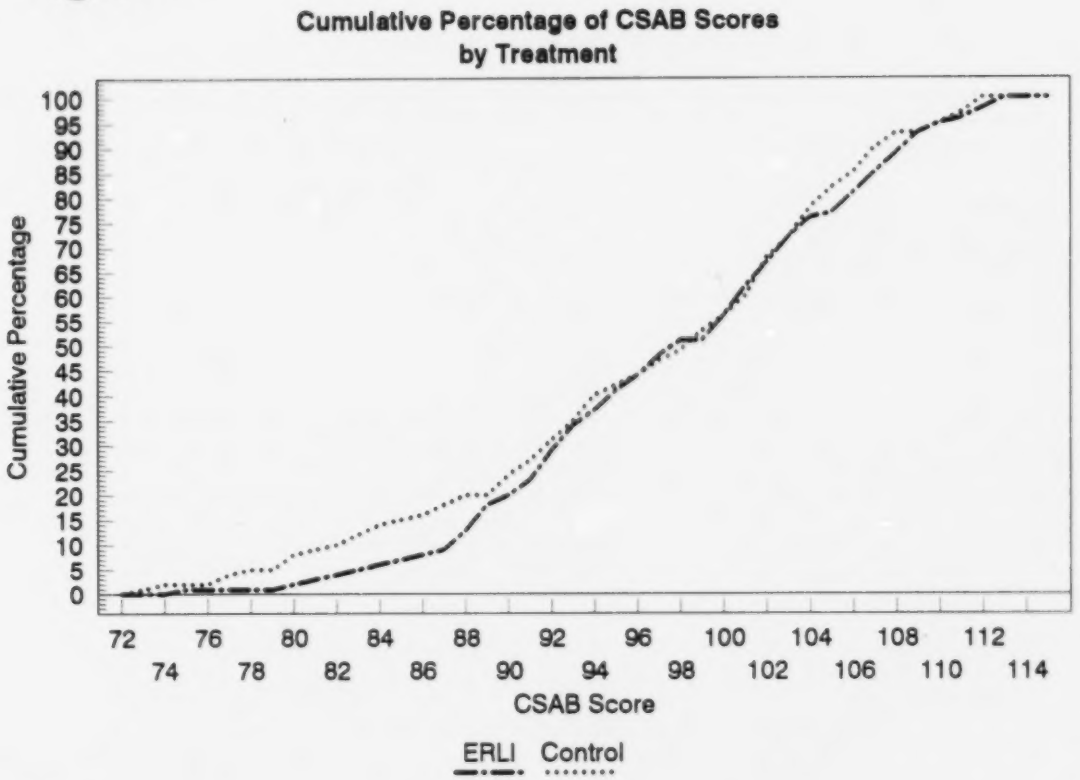
Table 1

CSAB Scores for Control and Experimental Groups - Part One of Study

	Control			Experimental		
	n	M	sd	n	M	sd
CSAB	100	96.76	9.54	100	97.95	8.41

frequencies for CSAB Scores for the two groups and demonstrates the strong similarities of the CSAB Score Distributions for the Experimental and Control Groups.

Figure 1



Information concerning Gender, Ethnicity, and Lunch Status (a proxy for socio-economic status) is contained in Table 2, Table 3, and Table 4, respectively. It should be pointed out that the information in Table 3 is the actual result of a truly random selection process.

Table 2

Composition of Experimental and Control Groups by Gender - Part One of Study

	Male	Female
Experimental		
Number	45	55
Percent	45	55
Control		
Number	55	45
Percent	55	45

Table 3

Composition of Experimental and Control Groups by Ethnicity - Part One of Study

	Black	White	Other
Experimental			
Number	7	92	1
Percent	7	92	1
Control			
Number	7	92	1
Percent	7	92	1

Table 4

Composition of Experimental and Control Groups by Lunch Status - Part One of Study

	Free/Reduced Lunch	Paid Lunch
Experimental		
Number	23	77
Percent	23	77
Control		
Number	35	65
Percent	35	65

Part Two of the study used a Matched Pair Design. The district had originally planned to conduct a year-end evaluation similar to the one conducted at mid-year. However, the popularity of ERLI with teachers resulted in substantial contamination of any potential controls as non-ERLI teachers adopted ERLI components in their classrooms. The revised plan used CSAB Scores to match 557 ERLI students from the 1995-96 first grade cohort with 557 control students from the 1994-95 first grade cohort since no ERLI instruction was provided during the 1994-95 school year. The ERLI teachers involved were all continuing teachers with the district and for the most part, were also the teachers for the Control Group. The CSAB Score match was near perfect. Mean CSAB Scores were nearly identical (Control=95.85 and Experimental=95.81; r=.999). Table 5 contains the CSAB information.

Table 5

CSAB Scores for Control and Experimental Groups - Part Two of Study

	Control			Experimental		
	n	M	sd	n	M	sd
CSAB	557	95.85	9.59	557	95.81	9.68

Despite the absence of any effort to insure demographic balance between the ERLI and Control Groups for Part Two of the study the groups were amazingly similar. Table 6, Table 7, and Table 8 contain information concerning Gender, Ethnicity, and Lunch Status.

Table 6

Composition of Experimental and Control Groups by Gender - Part Two of Study

	Male	Female
Experimental		
Number	289	268
Percent	51.9	48.1
Control		
Number	296	261
Percent	53.1	46.9

Table 7

Composition of Experimental and Control Groups by Ethnicity - Part Two of Study

	Black	White	Asian Pacific	Hispanic
Experimental				
Number	33	516	7	1
Percent	5.9	92.6	1.3	0.2
Control				
Number	30	519	7	1
Percent	5.4	93.1	1.3	0.2

Table 8

Composition of Experimental and Control Groups by Lunch Status - Part Two of Study

	Free/Reduced Lunch	Paid Lunch
Experimental		
Number	123	434
Percent	22.1	77.9
Control		
Number	151	406
Percent	27.1	72.9

3.3 Description of Instrumentation

The Basic Reading Inventory, Sixth Edition was used for all dependent measures in Part One of the study. This instrument provides Independent, Instructional, and Frustration Reading Levels for each of two subtests: Word Recognition in Isolation (Vocabulary) and Word Recognition in Context (Comprehension). While the researcher was initially assured that this instrument also produced a raw score on each of these measures, this information proved to be less than correct. The instrument is individually administered and whether one moves on from one level to the next or stops is determined by the number correct at that level. This means that it is possible for a subject at a given reading level to have a "Raw" score higher than another subject at a higher level. The restrictions implied here are further explained in Section 3.4 Statistical Procedures.

Scores on the *Cognitive Skills Assessment Battery*, a South Carolina normed first grade readiness test, were used for selecting the Control subject for each matched pair in Part Two of the study. This test is administered to all entering first graders in South Carolina.

The *Metropolitan Achievement Test, Seventh Edition*, a nationally normed norm-reference test produced by the Psychological Corporation of Harcourt Brace Jovanovich, Inc. was administered to both groups in Part Two of the study using the same testing window near the end of each group's

first grade year as a part of district achievement testing. The dependent measures were the scaled scores on the Total Reading, Vocabulary, Reading Comprehension, and Language Sub-Tests.

3.4 Statistical Procedures

Chi-Square Tests were conducted on each of the six measures obtained from the *Basic Reading Inventory, Sixth Edition*. Specifically, the measures compared were frequency counts for the Experimental and Control Groups for each Level on Independent Vocabulary, Instructional Vocabulary, Frustration Vocabulary, Independent Comprehension, Instructional Comprehension, and Frustration Comprehension. In order to have a valid Chi-Square, fourteen levels were paired and combined into seven levels. Result from the Chi-Squares were used to answer the research question for Part One of the study.

Related Sample T-Tests were conducted for each of the four dependent variables from Part Two of the study: Total Reading Scaled Scores, Vocabulary Scaled Scores, Reading Comprehension Scaled Scores, and Language Scaled Scores. The results of these Related Sample T-Tests were used to answer the research question for Part Two of the study.

Graphics developed following initial analysis of the data for Part Two of the study suggested possible interaction effects between one or more of the dependent variables and the matching variable. To investigate this

possibility, a second analysis was performed on the data using a fully crossed two-way ANOVA.

3.5 Limitations of the Study

1. Contamination of the Control Group was noted following Part One of the study. For this reason, the Control Group for Part Two of the study was selected from among the prior year cohort. The extent of contamination during Part One of the study is not known, but it clearly existed to some degree and may have minimized differences between the groups on some if not all of the measures. Consequently, all findings from Part One of the study must be considered suspect. No contamination existed for Part Two of the study as conducted.

2. The Experimental and the Control Groups for both Part One and Part Two of the study are composed almost entirely of white middle class students. Results from this study may not be generalizable to other populations.

Chapter 4
Results and Discussion

4.1 Results

Six hypotheses were formulated to assist in answering the research question for Part One of this study. These hypotheses are:

Hypothesis 1:

There is a difference in Independent Level for Vocabulary as measured by *The Basic Reading Inventory, Sixth Edition* for ERLI and non-ERLI first grade students.

Hypothesis 2:

There is a difference in Instructional Level for Vocabulary as measured by *The Basic Reading Inventory, Sixth Edition* for ERLI and non-ERLI first grade students.

Hypothesis 3:

There is a difference in Frustration Level for Vocabulary as measured by *The Basic Reading Inventory, Sixth Edition* for ERLI and non-ERLI first grade students.

Hypothesis 4:

There is a difference in Independent Level for Comprehension as measured by *The Basic Reading Inventory, Sixth Edition* for ERLI and non-ERLI first grade students.

Hypothesis 5:

There is a difference in Instructional Level for Comprehension as measured by *The Basic Reading Inventory, Sixth Edition* for ERLI and non-ERLI first grade students.

Hypothesis 6:

There is a difference in Frustration Level for Comprehension as measured by *The Basic Reading Inventory, Sixth Edition* for ERLI and non-ERLI first grade students.

Hypotheses 7-10 were formulated to assist in answering the research question for Part Two of this study. These hypotheses are:

Hypothesis 7:

ERLI students will have a different mean scaled score on the Total Reading Subtest of the MAT-7 from non-ERLI students.

Hypothesis 8:

ERLI students will have a different mean scaled score on the Reading Vocabulary Subtest of the MAT-7 from non-ERLI students.

Hypothesis 9:

ERLI students will have a different mean scaled score on the Reading Comprehension Subtest of the MAT-7 from non-ERLI students.

Hypothesis 10:

ERLI students will have a different mean scaled score on the Language Subtest of the MAT-7 from non-ERLI students.

Table 9 presents the summary data for both the Experimental and Control Groups for Part One of the study.

Table 9

Summary Data for Control and Experimental Groups - Count by Level by Subtest - Part One of Study

Subtest	LVL0	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6
VIND							
Control	53	14	13	15	4	1	0
ERLI	55	10	13	10	6	1	5
VINST							
Control	26	5	24	20	16	3	6
ERLI	17	15	14	24	15	4	11
VFRUST							
Control	0	25	5	25	20	17	8
ERLI	0	15	17	14	24	15	15
CIND							
Control	46	19	5	14	7	4	5
ERLI	30	17	16	12	6	7	12
CINST							
Control	32	20	11	6	12	8	11
ERLI	22	16	13	8	12	5	24
CFRUST							
Control	18	18	17	11	9	13	14
ERLI	6	17	18	11	9	13	26

Table 10 presents the data pertinent to the research question for Part One of the study.

Table 10

Chi-Square Summary Data for Control and Experimental Groups - Part One of Study

Subtest	Chi-Square	Prob
VIND	7.104	0.311
VINST	11.525	0.073
VFRUST	14.767	0.011
CIND	13.173	0.040
CINST	8.270	0.219
CFRUST	9.657	0.140

Table 11 presents the summary data for Part Two of the study. Data pertinent to answering the research question for Part Two of the Study is found in Table 12.

Table 11

Summary Data for Experimental and Control Groups by Subtest - Part Two of Study

MAT-7 Subtest	Experimental				Control			
	n	Mean	SD	StdErr	n	Mean	SD	StdErr
Total Reading	557	514	43.30	1.83	557	492	29.75	1.26
Vocabulary	557	478	56.35	2.39	557	450	43.19	1.83
Reading Comprehension	557	522	42.48	1.80	557	499	29.35	1.24
Language	557	538	30.84	1.31	557	524	24.38	1.03

Table 12

Discrepancies Between Experimental and Control Groups by Subtest - Part Two of Study

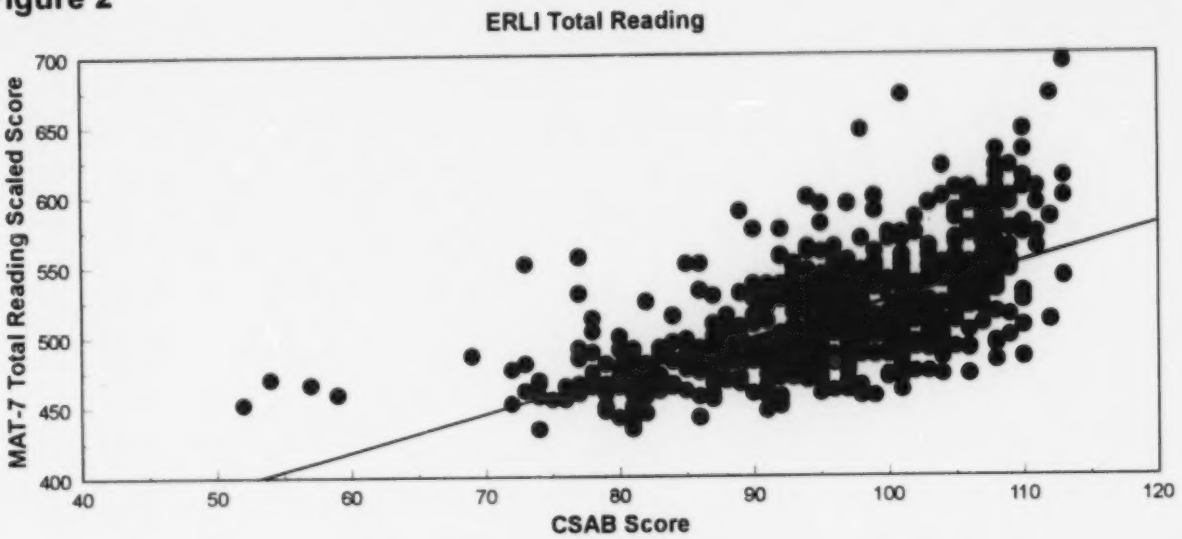
MAT-7 Subtest	Number of Cases	Mean Discrepancy	SD of Discrepancy	Standard Error	t	prob > |t|
Total Reading	557	22.19	41.02	1.74	12.76	0.0001
Vocabulary	557	28.76	56.98	2.41	11.91	0.0001
Reading Comprehension	557	23.34	43.78	1.86	12.58	0.0001
Language	557	14.06	30.94	1.31	10.72	0.0001

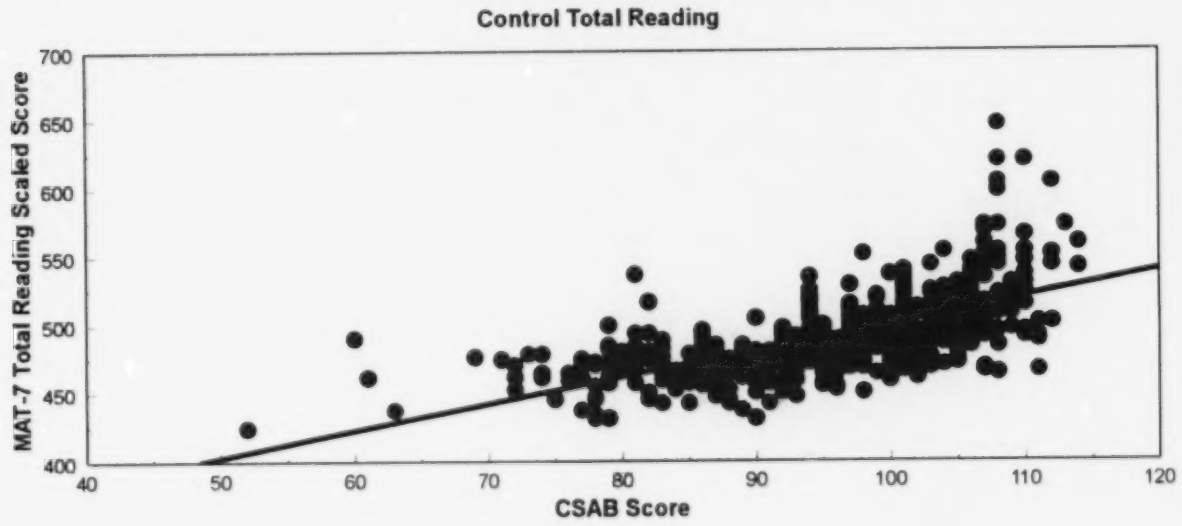
From these data it may be concluded that for Part One of the Study, Hypotheses 3 and 4 are supported. Hypotheses 1, 2, 5, and 6 are not supported. It may be concluded that all Hypotheses (Hypotheses 7, 8, 9 and 10) are supported for Part Two of the Study.

Figures 2, 3, 4 and 5 compare the dependent variables from Part Two of the study with CSAB Scores by means of scatter plots and regression lines. Each suggests a possible interaction effect which could raise serious equity concerns. Three of these suspected interaction effects were confirmed by dividing both Experimental and Control Groups into three subgroups of equal size (Low, Medium, and High based upon CSAB Scores) and using a fully-crossed two-way ANOVA. While significant interactions between CSAB and three of the four dependent variables were found, their small sizes relative to the Group effects minimizes their practical importance. Tables 13, 14, 15, and 16 provide this information.

Figures 6, 7, 8, and 9 graphically compare the dependent variable scaled score means at each of the CSAB levels (Low, Medium, and High) for ERLI and Control Groups. While other summary data is not presented, all of the differences are relatively close to those presented earlier for the entire groups. While mean differences do become larger moving from Low to Medium to High, the differences are small enough to assuage any concern over equity issues.

Figure 2


ERLI Total Reading
MAT-7 Total Reading Scaled Score
700
650
600
550
500
450
400
40
50
60
70
80
90
100
110
120
CSAB Score


Control Total Reading
MAT-7 Total Reading Scaled Score
700
650
600
550
500
450
400
40
50
60
70
80
90
100
110
120
CSAB Score

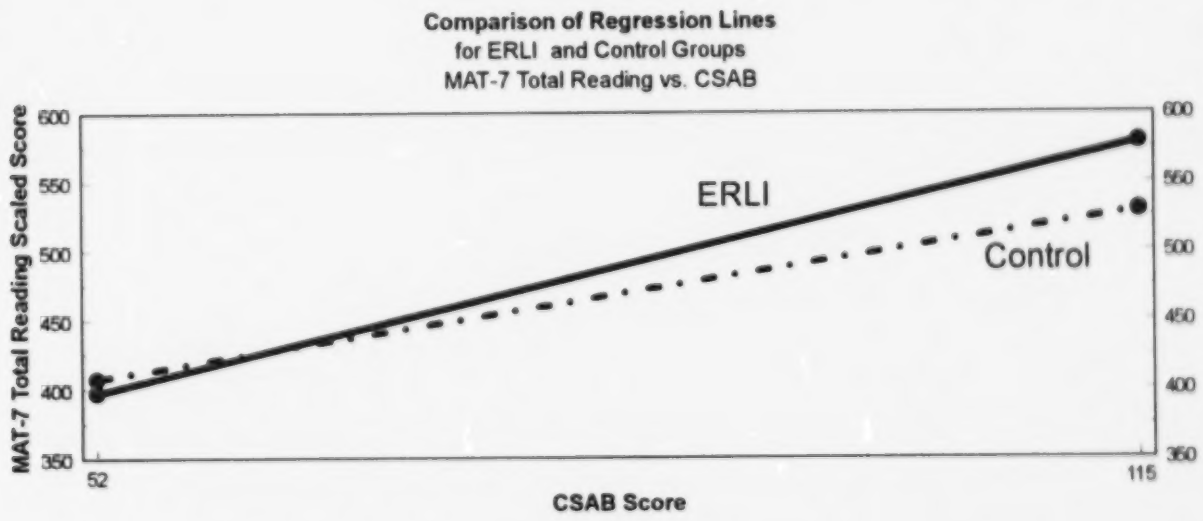
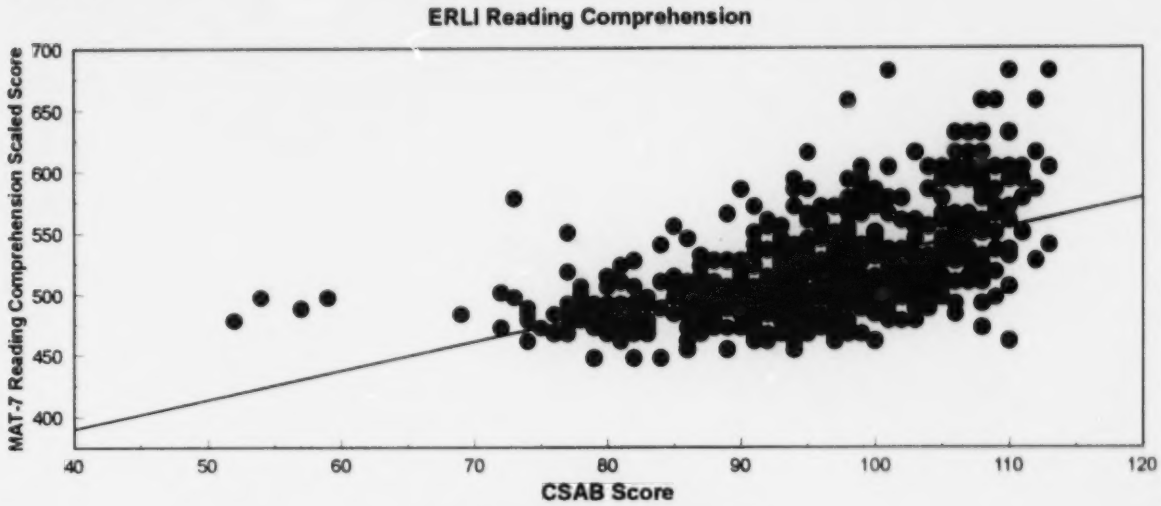
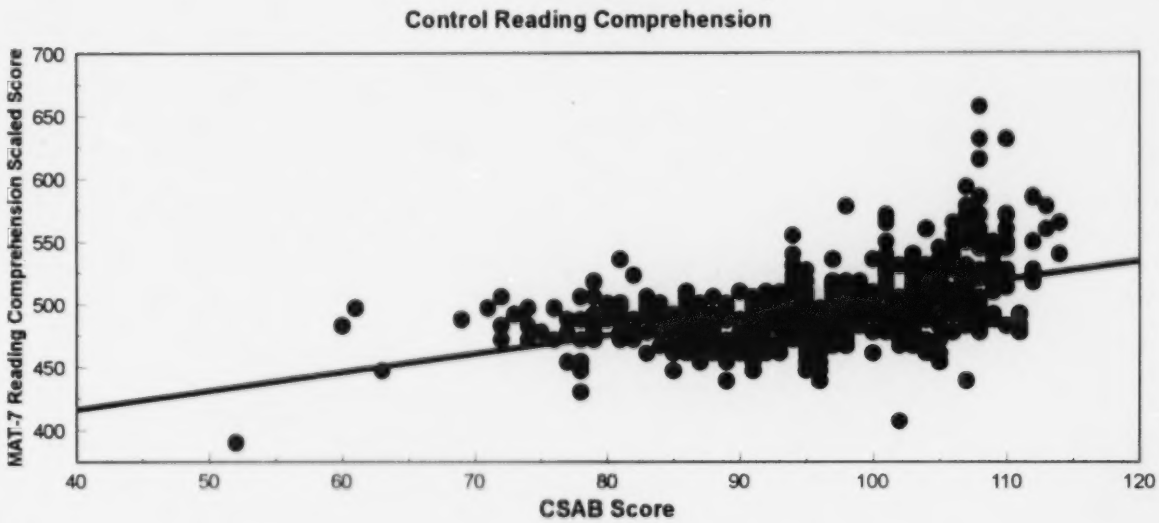

Comparison of Regression Lines
for ERLI and Control Groups
MAT-7 Total Reading vs. CSAB
MAT-7 Total Reading Scaled Score
600
550
500
450
400
350
ERLI
Control
52
115
CSAB Score

Figure 3


ERLI Reading Comprehension
MAT-7 Reading Comprehension Scaled Score
700
650
600
550
500
450
400
40
50
60
70
80
90
100
110
120
CSAB Score


Control Reading Comprehension
MAT-7 Reading Comprehension Scaled Score
700
650
600
550
500
450
400
40
50
60
70
80
90
100
110
120
CSAB Score

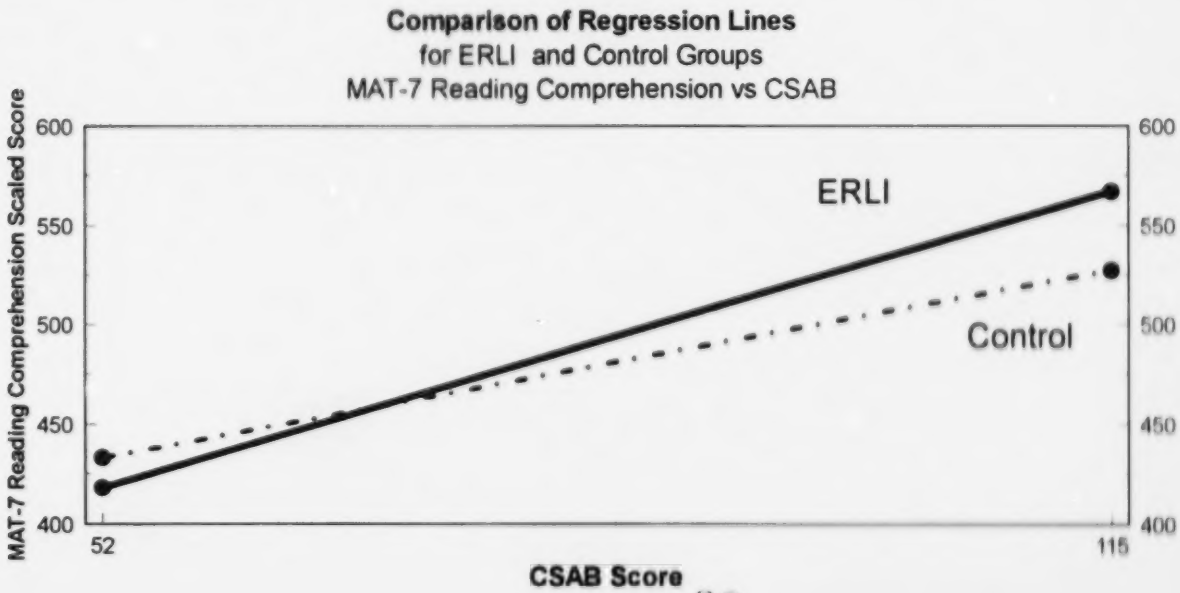
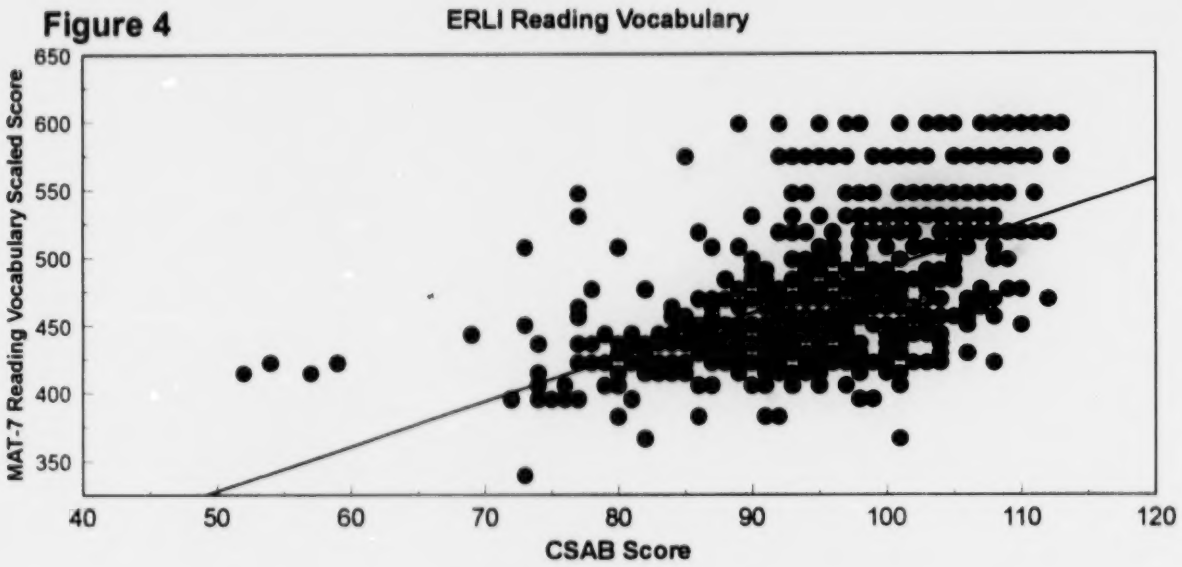

Comparison of Regression Lines
for ERLI and Control Groups
MAT-7 Reading Comprehension vs CSAB
MAT-7 Reading Comprehension Scaled Score
600
550
500
450
400
ERLI
Control
52
115
CSAB Score

Figure 4


ERLI Reading Vocabulary
MAT-7 Reading Vocabulary Scaled Score
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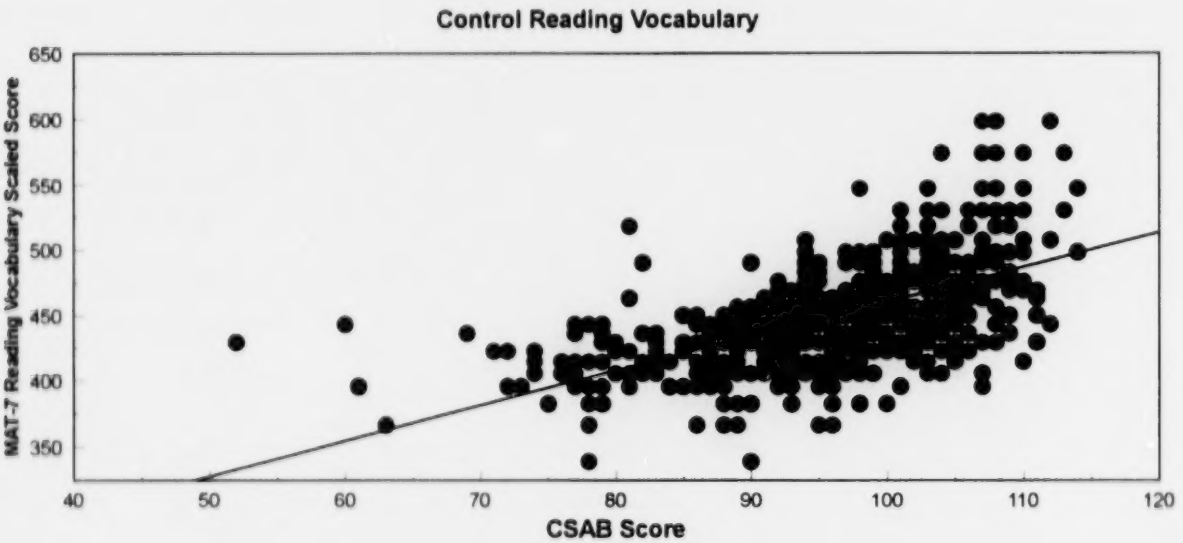
600
550
500
450
400
350
40
50
60
70
80
90
100
110
120
CSAB Score


Control Reading Vocabulary
MAT-7 Reading Vocabulary Scaled Score
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600
550
500
450
400
350
40
50
60
70
80
90
100
110
120
CSAB Score

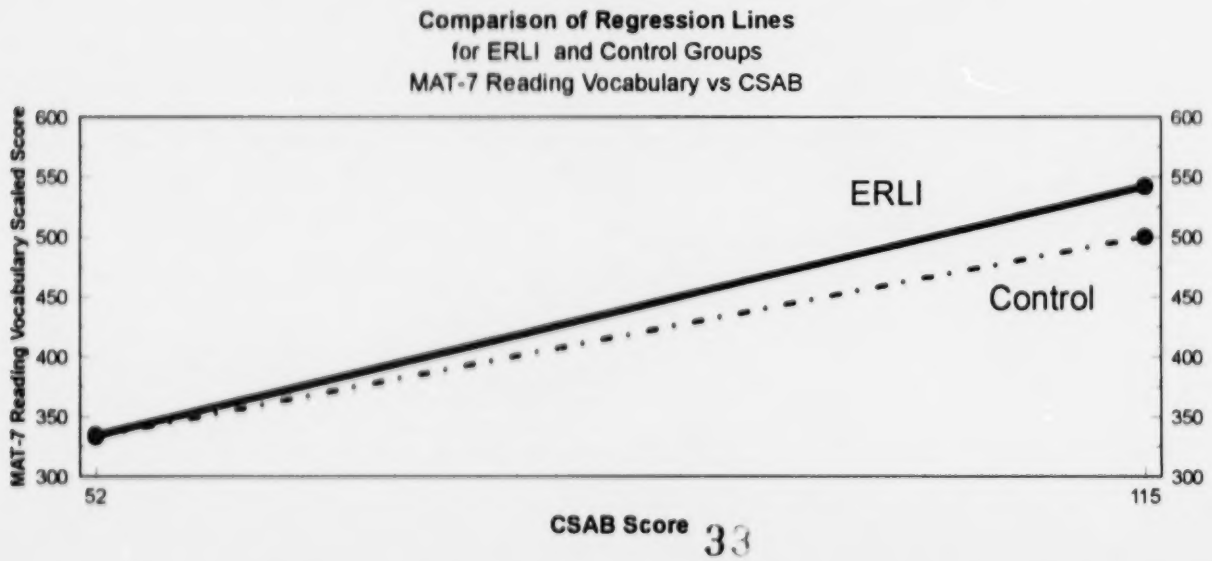
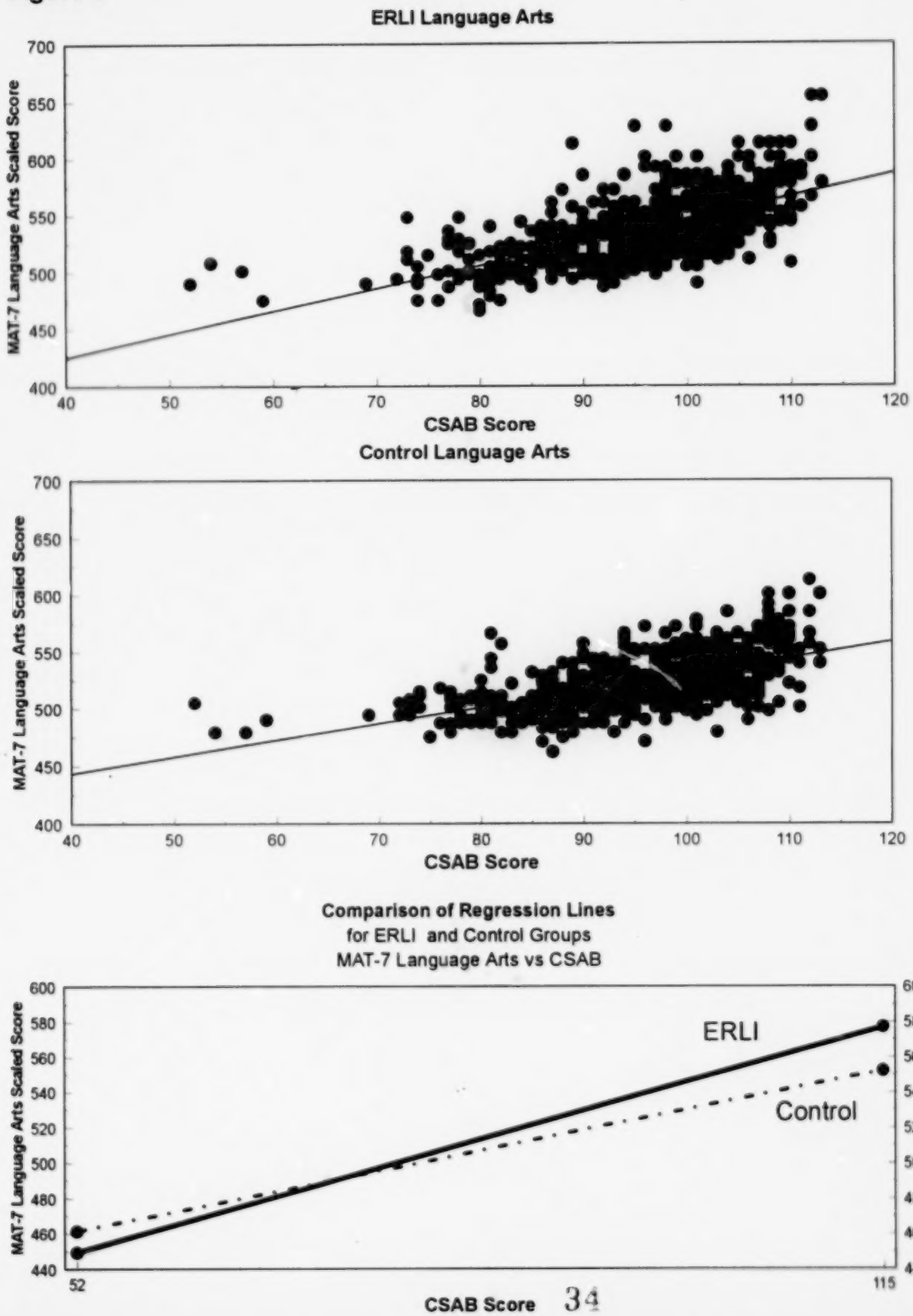

Comparison of Regression Lines
for ERLI and Control Groups
MAT-7 Reading Vocabulary vs CSAB
MAT-7 Reading Vocabulary Scaled Score
600
550
500
450
400
350
300
ERLI
Control
52
115
CSAB Score

Figure 5


ERLI Language Arts
MAT-7 Language Arts Scaled Score
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650
600
550
500
450
400
40
50
60
70
80
90
100
110
120
CSAB Score
Control Language Arts
MAT-7 Language Arts Scaled Score
700
650
600
550
500
450
400
40
50
60
70
80
90
100
110
120
CSAB Score
Comparison of Regression Lines
for ERLI and Control Groups
MAT-7 Language Arts vs CSAB
MAT-7 Language Arts Scaled Score
600
580
560
540
520
500
480
460
440
ERLI
Control
52
115
CSAB Score

Table 13

Interaction Between GROUP and CSAB LEVEL on Total Reading

Source	DF	Mean Square	F	prob > F
Group	1	137,525	148.87	0.0001
Level	2	251,646	272.41	0.0001
Group*Level	2	3,838	4.15	0.0159

Table 14

Interaction Between GROUP and CSAB LEVEL on Reading Comprehension

Source	DF	Mean Square	F	prob > F
Group	1	152,007	151.57	0.0001
Level	2	176,832	176.33	0.0001
Group*Level	2	8,613	8.59	0.0002

Table 15

Interaction Between GROUP and CSAB LEVEL on Reading Vocabulary

Source	DF	Mean Square	F	prob > F
Group	1	231,170	133.42	0.0001
Level	2	438,508	253.09	0.0001
Group*Level	2	2,958	1.71	0.1819

Table 16

Interaction Between GROUP and CSAB LEVEL on Language Arts

Source	DF	Mean Square	F	prob > F
Group	1	55,277	103.95	0.0001
Level	2	132,493	249.15	0.0001
Group*Level	2	2,470	4.64	0.0098

Figure 6

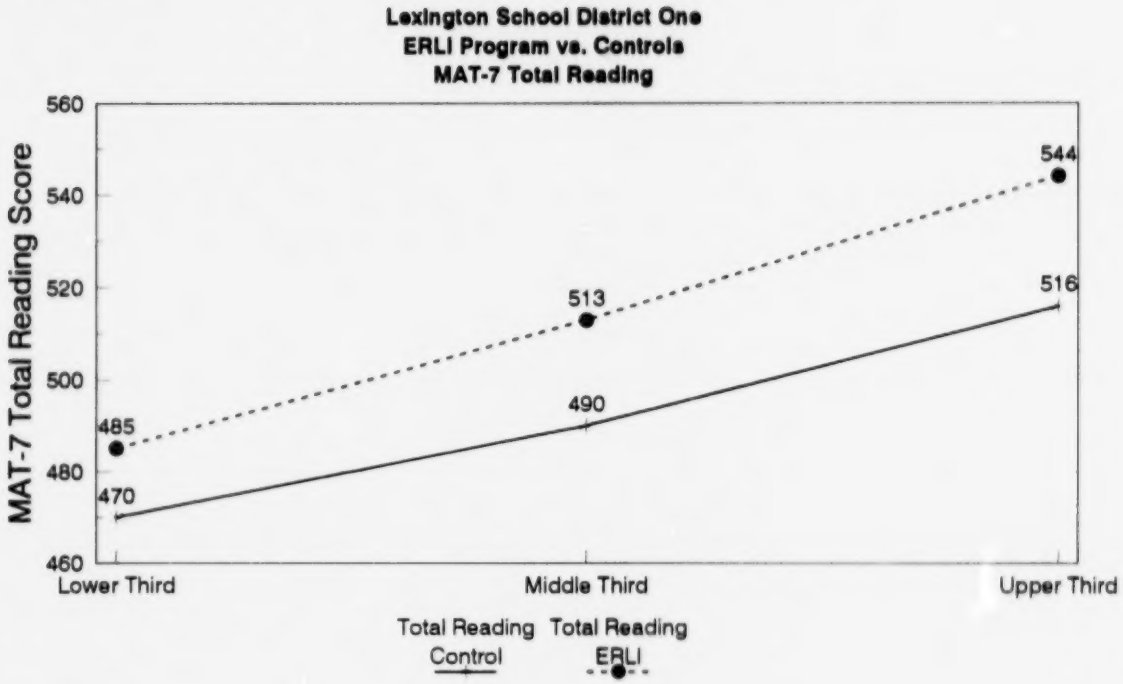


Figure 7

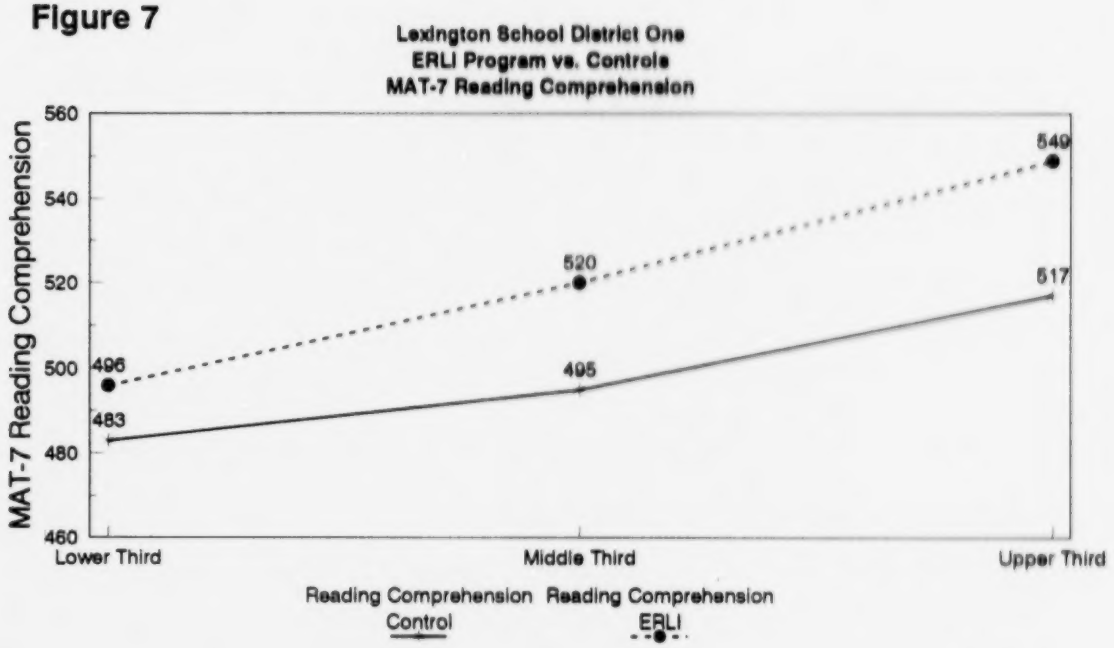


Figure 8

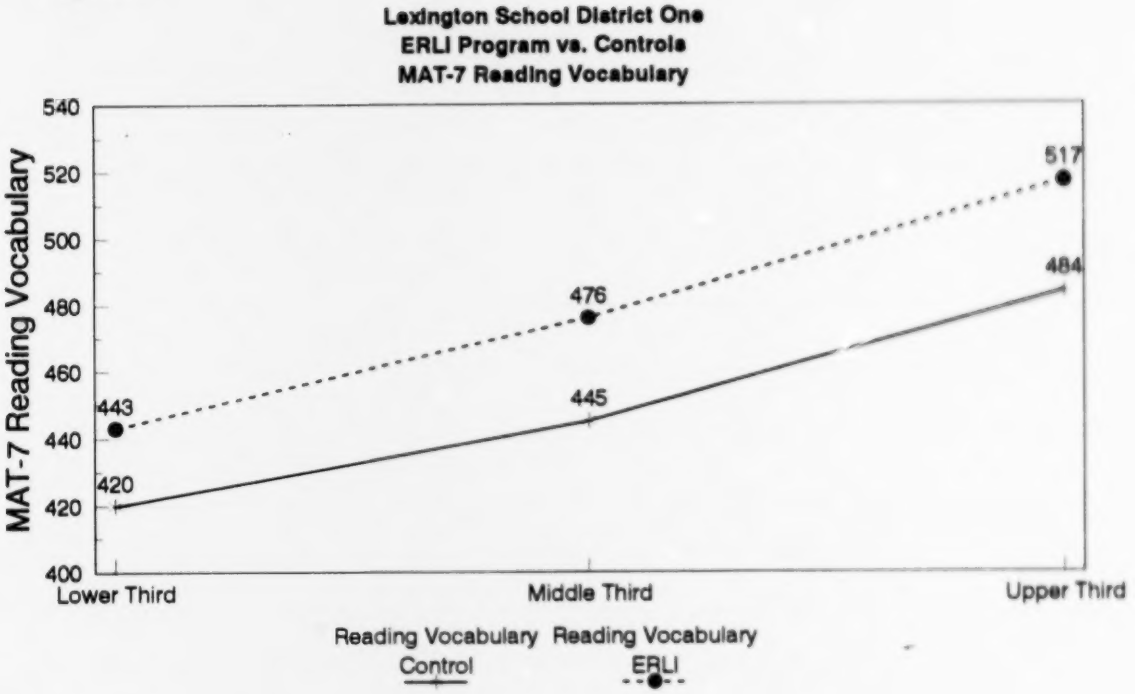
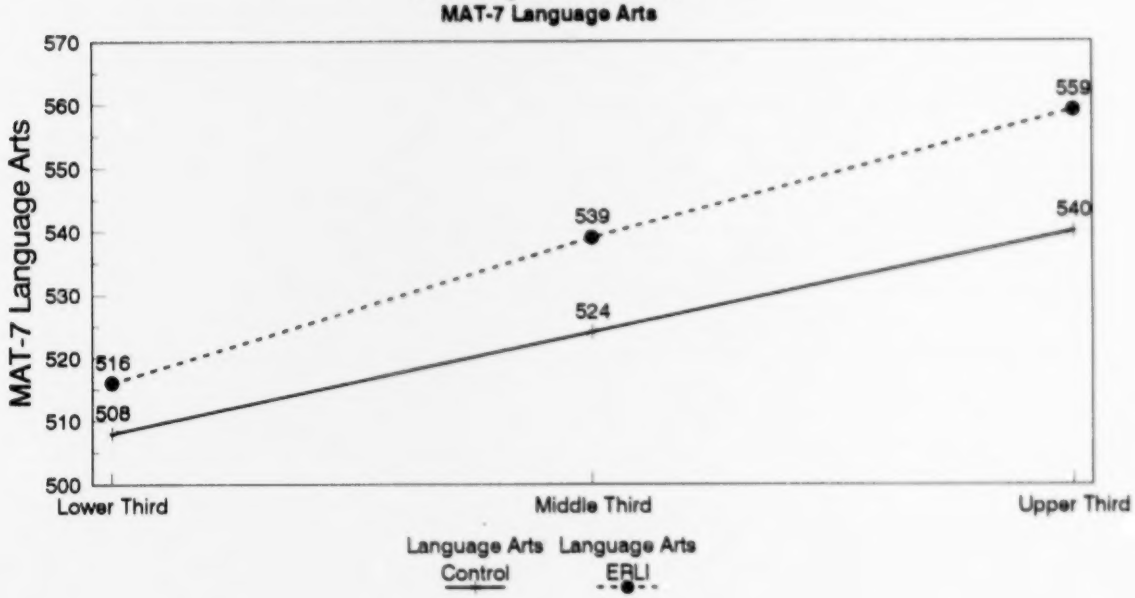


Figure 9



4.2 Discussion

While the Control Group in this study did not represent a full implementation of Whole Language, its strong influence was readily evident. The results of Part Two of this study should be considered a strong endorsement for the ERLI Model defined by Patricia Cunningham. It should be interpreted as a mild warning toward Whole Language approaches.

Results from Part One of the Study were much less clear cut. There are several possible explanations for this. The most obvious explanation is that contamination of the Control Group may have influenced the results. Another possible explanation is that the ERLI Model had only been in place for approximately four and one-half months. Even though all teachers were fully trained, their first efforts could not possibly demonstrate the skill and confidence of teachers experienced in the Model. The unprecedented popularity of the Model which resulted in its being "smuggled" into non-ERLI classrooms is one of the Model's great assets.

The national debate over Whole Language vs. Phonics continues to rage. Programs such as ERLI which call for a balanced approach are getting very little attention despite the fact that many educational leaders and legislators continue to call for balance. The important question is not whether Phonics is superior to Whole Language. Carefully controlled research which compares pure Whole Language with

the ERLI (or Cunningham or Four-Block) Model is presently the greatest need in reading research.

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